International Journal of Academic Research and Development
ISSN: 2455-4197, Impact Factor: RJIF 5.22
www.academicsjournal.com
Volume 2; Issue 4; July 2017; Page No. 466-469

Effect of Kalaripayattu training on selected physical variables among inter-collegiate men basketball players

[1] Rajith TR, [2] Dr. A Mahaboobjan

[1] Ph.D. Reaserch Scholar, Department of Physical Education, Bharathidasan University, Tiruchirappalli, Tamil Nadu, India
[2] Professor, Department of Physical Education, Bharathidasan University, Tiruchirappalli, Tamil Nadu, India

Abstract
The purpose of the present study was to determine the effect of Kalaripayattu training programme on selected Physical variables among inter- collegiate men basketball players. In order to achieve the purpose of the study, thirty basketball players were selected from the affiliated colleges the Kerala university, Thiruvananthapuram. The subjects were randomly selected and their age group ranged from 18-23 years. The selected groups were divided in to two groups, experimental group and control group. The experimental group (EG) underwent the medium of twelve Kalaripayattu selected skill training. The control group (CG) not exposed to any training. Kalaripayattu training is considered as the independent variable. The physical variables (agility, leg explosive power and flexibility) are dependent variables. The statistical technique covariance ANCOVA was used to analyze the pre-test and post-test data of experimental group and control group. The results showed that the Kalaripayattu training group had significant improvement ($P \leq 0.05$) in the level of all the selected physical variables as compared to the control group.

Keywords: kalaripayattu training, agility, leg explosive power, flexibility

Introduction
Kalaripayattu is a traditional fighting system and martial art of Kerala having 3000 years of cultural history which combines many facts evenly and it gives health benefits, body leg explosive power, self defence and other physical benefits too. It is known to be the mother of all martial arts and has become popular among common people. Since it is more than a martial arts and way of life in its own modern life style has prompted a lot to adopt traditional methods to provide health and fitness to body parts as well as mental ailments (Luijendijk, 2006) [10].
It has four distinct stages - meythari, kolthari, angathari and verumkai. Meythari that gives benefits to body as whole. Kolthari, angathari and verumkai make the body to respond quickly and stimulate body parts, movements, leg explosive power and many other bodily benefits related to health. It provides a good stretching exercise. It moulds the body to function healthy and fit.

Methodology
The purpose of the study is to find out the effect of Kalaripayattu training on selected physical variables among inter-collegiate men basketball players. To achieve the purpose of this study, thirty basketball players were selected from affiliated colleges of the Kerala University, Thiruvananthapuram. The subjects were randomly selected and their age ranged from 18 to 23 years. The selected subjects were divided into two equal groups of fifteen each namely, experimental group and control group.
Group I is experimental group which underwent the Kalaripayattu training and Group II acted as control group. Data were analyzed by using covariance (ANCOVA). Statistical significance was fixed at 0.05 levels. The variables and tests used are presented in table-1

Table 1: Selection of variables and test

Sl. No	Variables	Test /Instruments	Unit of Measure
1	Agility	Shuttle Run	Seconds
2	Leg Explosive Power	Vertical Jump	Centimetres
3	Flexibility	Sit and Reach	Centimetres

Analysis and Interpretation
The influence of Kalaripayattu training on physical parameters was analysed separately and the data is presented below.

Table 2: Computation of analysis of covariance of agility of both Kalaripayattu group and control group

Variables	Variance	CG	EG	Source of Variance	Sum of Squares	df	Mean Square	F
Agility	Pre Test Mean	12.60	12.67	BG	.033	1	0.033	0.01
				WG	83.776	28	2.992	
	Post Test Mean	12.65	10.47	BG	35.665	1	35.665	22.00*
				WG	45.387	28	1.621	
	Adjusted Mean	12.68	10.45	BG	37.091	1	37.091	113.36*
				WG	8.834	27	.327	

*Significant at 0.05 level of confidence.

The table value required for significant at 0.05 level confidence for 1 to 28&1 to 27 are 4.30 and 4.20 and 4.21 respectively.

The table 2 shows that the pre-test mean values on agility of Kalaripayattu training group and control group were 12.60 and 12.67 respectively. The Obtained 'F' ratio value 0.01for pre test score on agility was less than required table value 4.20 for insignificant with df 1 and 28. The post-test mean value on agility of Kalaripayattu training group and control group were 12.65 and 10.47 respectively. The Obtained 'F' ratio value 22.00 for post test score on agility which was more than required table value 4.20 for significant with df 1 and 28 at 0.05 level of confidence. The adjusted post mean value on agility for Kalaripayattu training group and control group were 12.68 and 10.45 respectively. The obtained 'F' ratio value 113.36 for adjusted post-test score on agility which was more than required table value 4.21 for significant with df 1 and 27 at 0.05 level of confidence. The results of the study showed that there was a significant difference among Kalaripayattu trained group and control group on agility.

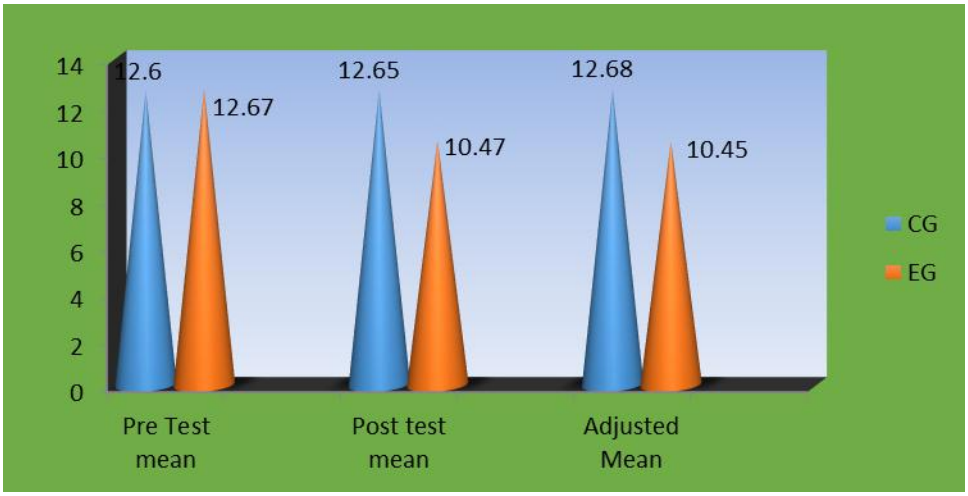

Fig 1: Kalaripayattu trained and control group on agility

Table 3: Computation of analysis of covariance of leg explosive power of both Kalaripayattu group and control group

Variables	Variance	CG	EG	Source of Variance	Sum of Squares	df	Mean Square	F
LEG Explosive Power	Pre Test Mean	85.40	86.33	BG	6.53	1	6.53	0.11
				WG	1646.93	28	58.82	
	Post Test Mean	85.07	97.40	BG	1140.83	1	1140.83	20.11*
				WG	1588.53	28	56.73	
	Adjusted Mean	85.51	96.96	BG	979.49	1	979.491	229.13*
				WG	115.42	27	4.28	

*Significant at 0.05 level of confidence.

The table value required for significant at 0.05 level confidence for 1 to 28&1 to 27 are 4.30 and 4.20 and 4.21 respectively.

The table 2 shows that the pre-test means values on leg explosive power for Kalaripayattu training group and control group were 85.40 and 86.33 respectively. The obtained 'F' ratio value 0.11 for pre test score on leg explosive power was less than required table value 4.20 for insignificant with df 1 and 28. The post mean value on leg explosive power for Kalaripayattu training group and control group were 85.07 and 97.40 respectively. The obtained 'F' ratio value 20.11 for post-test score on leg explosive power which was more than required table value 4.20 for significant with df 1 and 28 at 0.05 level of confidence. The adjusted post mean value on leg explosive power for Kalaripayattu training group and control group were 85.51 and 96.96 respectively. The obtained 'F' ratio value 229.13 for adjusted post test score on leg explosive power was more than required table value 4.21 for significant with df 1 and 27 at 0.05 level of confidence. The results of the study showed that there was a significant difference among Kalaripayattu training and control group on leg explosive power.

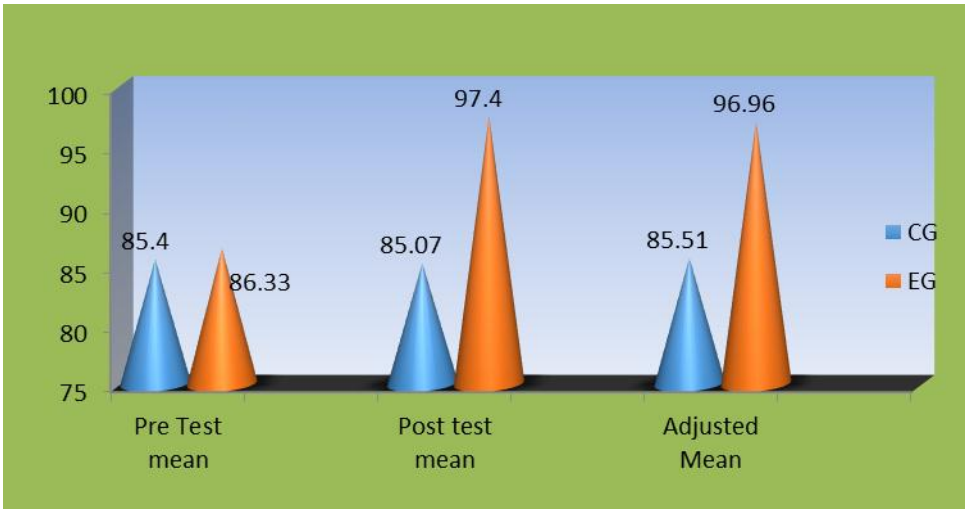

Fig 2: Kalaripayattu training and control group on Leg explosive power

Table 4: Computation of analysis of covariance of flexibility of both Kalaripayattu group and control group

Variables	Variance	CG	EG	Source of Variance	Sum of Squares	df	Mean Square	F
FLEXIBILITY	Pre Test Mean	21.80	22.87	BG	8.53	1	8.53	1.47
				WG	162.13	28	5.79	
	Post Test Mean	21.87	26.80	BG	182.53	1	182.53	41.17
				WG	124.13	28	4.43	
	Adjusted Mean	22.28	26.39	BG	119.95	1	119.95	125.03
				WG	25.90	27	0.96	

*Significant at 0.05 level of confidence.

The table value required for significant at 0.05 level confidence for 1 to 28&1 to 27 are 4.30 and 4.20 and 4.21 respectively.

The table 3 shows that the pre test mean values on flexibility for Kalaripayattu training group and control group were 21.80 and 22.87 respectively. The obtained 'F' ratio value 1.47 for pre-test score on flexibility was less than required table value 4.20 for significant with df 1 and 28. The post mean value on flexibility for Kalaripayattu training group and control group were 21.87 and 26.80 respectively. The obtained 'F' ratio value 41.17 for post-test score on flexibility was more than required table value 4.21 for significant with df 1 and 28 at 0.05 level of confidence. The adjusted post mean value on flexibility for Kalaripayattu training group and control group were 22.28 and 26.39 respectively. The obtained 'F' ratio value 125.03 for adjusted post test score on flexibility was more than required table value 4.21 for significant with df 1 and 27 at 0.05 level of confidence. The results of the study showed that there was a significant difference among Kalaripayattu training and control group on flexibility.

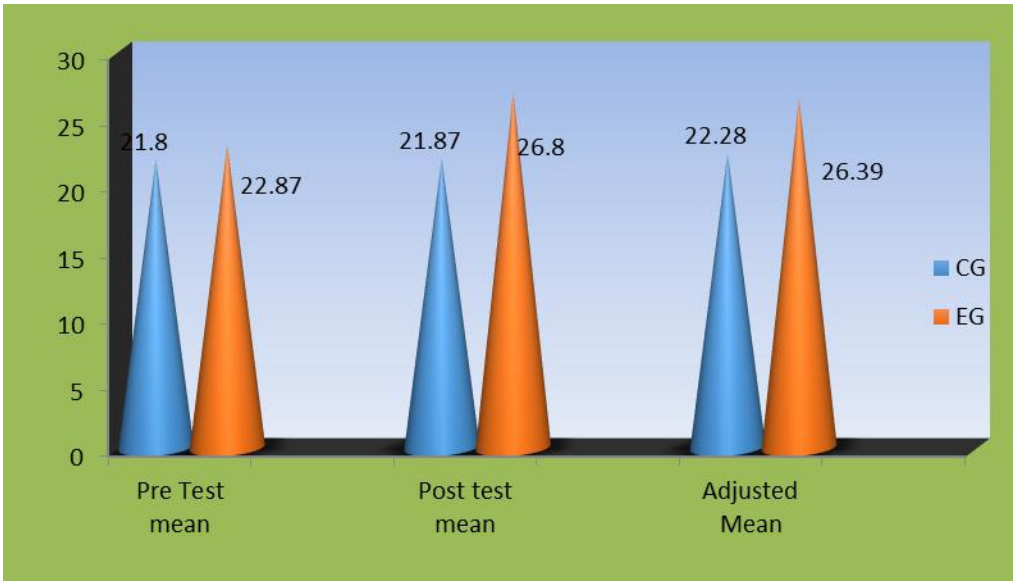

Fig 3: Kalaripayattu training and control group on flexibility

Discussion and Findings

This study is supported by a study (Sukumar, *et al*., 2017) [4] which resulted that the plyometric exercises gave positive results on the agility among the netball players and the study (Krasilshchikov, *et al*., 2017) [3] proved that the effects of pre-season resistance training significantly affected agility of female University softball players. The study (Jyoti, *et al*., 2016) [5] found that the effect of callisthenic and aerobic exercises improved the flexibility of primary school students and similar study (Narender, *et al*., 2016) [8] stated that the effect of 8-week flexibility training developed the flexibility of 20 sports persons who were selected as subjects for adopting convenient sampling. The study (Antony, *et al*., 2017) [6] found that the effect of Pilates exercises training and medicine ball training significantly improved the leg explosive power in men inter-collegiate football players. Another supporting study by (Manikandan, 2010) [7] proved that effect of conventional resistance training increased the explosive power among University Athletes.

Conclusions

The results of the study reveal that there is a significant improvement on physical variables such as agility, leg explosive power and flexibility on the Kalaripayattu training group when compared to the control group. These changes are due to training as well as due to participating Kalaripayattu training. A specific Kalaripayattu training programme with the structure and loads reported in this study is effective for improving body composition, agility, leg explosive power and flexibility. The training inspires changes in physical variables such as agility, leg explosive power and flexibility of the basketball players. The unique profile should be taken into consideration while administering training to the basketball players.

Reference

1. Chandran CK, Nair RH, Shashidhar S. Respiratory functions in Kalaripayattu practitioners. Indian Journal of Physiology and Pharmacology. 2004; 48(2):235-240.
2. Paul J, Jeeva Singh. Influence of kalari Practices on Triiodothyronine(T_3) and thyroxine (T_4) of college men students. Emerging Trends in physical education and sports science. 2011; 51:162-165.
3. Nur Iman Bin Md Rahim, Oleksandr Krasilshchikov. The effects of pre-season resistance training program on fitness profile of female university softball players. International Journal of Yoga, Physiotherapy and Physical Education. 2017; 2(1):15-19.
4. Sukumar B. Effect of plyometric exercises on agility among the netball players. International Journal of Physical Education, Sports and Health. 2017; 4(1):277-279.
5. Kum. Chilamur Chennamma D, Dr. DM Jyoti. Effect of Callisthenic Exercises and Yogasanas on Balance of Primary School Children'S. Review of Research, 2016; 6(3):1-4. http://doi.org/10.9780/2249-894X
6. Pa A, Antony AM. Effect of Pilates exercise training and medicine ball training on speed and explosive strength variables among men inter collegiate football players. International Journal of Physical Education, Sports and Health. 2017; 4(3):129-131.
7. Manikandan S. Effect of conventional resistance training on selected Motor components among University Athletes. International Journal of Physical Education, Sports and Health. 2014; 1(1):23-25-ISSN
8. Narender ES, Vashishtha R. Effect of 8-Week MESO cycle training on flexibility. 2016; 3(1):391-392.
9. http://www.palmlandtours.net/kerala/tours/kalari/kalaripayatte/kalari.htm, 2005 208
10. Luijendijk, Dick Hidde. Kalaripayattu the structure and essence of an Indian martialart, 2008, p(12). ISBN:9789090203676, http://hdl.handle.net/2066/65537
11. Ramajayam M. Efficacy of kalaripayattu and traditional with kalaripayattu training on selected motor fitness variables of college level men kabaddi players. Indian Streams Research Journal. 2015; https://doi.org/10.9780/22307850
12. http://kalaripayattuwkf.org/index.php#